



Real Estate Home Pricing: The Role of Hedonic model variables and Community Amenities

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Abstract

Although the residential real estate market has stabilized in the five -- seven years following the financial crisis of 2008 the market remains generally depressed with price growth stagnant. In turn forecasting an initial asking price using traditional hedonic pricing models is problematic: buyers have lost confidence in the market’s response. Additionally, community amenities may be viewed by buyers as a potential tax liability given reduced availability of federal and state funding for local services.

As originally suggested variables such as the square footage of a property can be used to explain changes in the selling prices of homes in these markets. The findings for question two were not anticipated. It would appear that high levels of community services are attractive to home buyers in this county.

If we consider the three towns, there may be variables that create attractiveness other than services and square footage. These differences may be masking another variable that has a higher explanatory value in relation to the variance observed in selling prices of homes in these communities.

Research Questions

1. Are hedonic variables such as square footage, number of bathrooms, bedrooms, etc. good predictors of the variance observed in asking prices?

The expectation is that the sold price will vary directly with changes in square footage of properties. Although there are several variables to choose from, square footage was chosen as the other variables are dependent or alter the total square footage of a property by their presence.

2. Given that community residential real estate tax rolls have contracted as a result of the 2008 Recession, have home buyers as measured by sold prices retreated from communities that have high community services offerings available to residents?

The expectation is that although the communities offer a significantly different range of services there will be no significant difference among the average sold prices per square foot among those communities.

Real Estate—Old School



Starting around 1965 national home ownership and occupancy rates grew on a positive basis. Paying a premium on purchase was acceptable as the probability was high that the market would eventually ‘catch up’ to their pre-purchase valuation. Sellers’ and buyers’ agents had a high level of confidence that listings would continue to sell in a reasonable time frame.

Town Data

The data for this study was drawn from the contiguous communities of Easton, Fairfield, and Weston located in Fairfield County Connecticut. Easton and Weston are exurban communities located approximately 65 miles northeast of Manhattan New York. They are considered within a commutable distance of Manhattan.

Development in Easton is restricted as 75% of the town land is a part of the Southern Connecticut watershed. Weston is similar to Easton in that it exurban in nature however, commercial development is not restricted. In contrast Fairfield is a large suburb of Manhattan with higher density and significant commercial development.

	Median HH Value	Median HH Income	Cost of Living Index
Easton	\$729,919	\$125,557	151.8
Fairfield	\$493,741	\$105,059	154.3
Weston	\$1,000,000	\$184,547	163.6

Findings

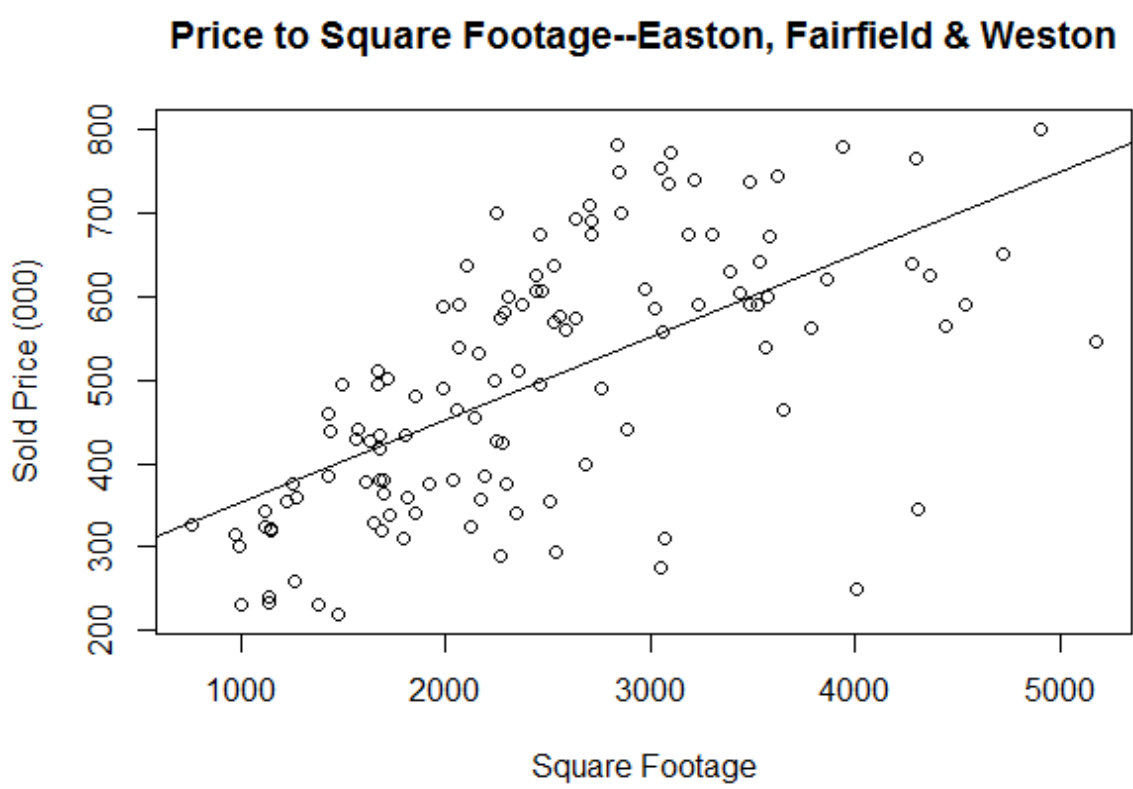
Based on the tests used to address these questions at the $\alpha = 0.05$ significance level, clearly within the contiguous towns of Easton, Fairfield and Weston located in Fairfield County Connecticut the square footage of homes offered for sale can be used to explain differences in the sold prices of those homes. Further, although the real estate market for these towns has changed following the 2008 Recession such factors as the services offered by towns will still play a positive role in home purchase selection beyond just price considerations.

Hedonic Pricing Models

The prevailing approach to developing an initial asking price for a residential sales offering is to apply some variation of a hedonic pricing model. Hedonic pricing models are based on the premise that the price of an item can be decomposed into its elements—internal or relating to the property and external relating to things such as the quality of the school or the air quality.

To evaluate this possibility, the sales price per square foot of properties will be compared across three adjacent communities in Fairfield County. Given that the communities vary in the number and size of homes available for sale, creating this sold price per square foot variable will minimize community size and housing stock availability bias.

Question 1. Data Summary



Question 2. Analysis of Variance

Price per Square Foot					
	df	Sum of Squares	Mean SS	F-value	p-value
Town	2	65538	32769	10.24	7.85e-05
Residual	120	384127	3201		